

# Journal of International Information Management

---

Volume 6 | Issue 1

Article 2

---

1997

## Computer Supported Strategic Management

Karen L. Fowler

*University of Northern Colorado*

Donna M. Scott

*Mesa State College*

Follow this and additional works at: <http://scholarworks.lib.csusb.edu/jiim>



Part of the [Management Information Systems Commons](#)

---

### Recommended Citation

Fowler, Karen L. and Scott, Donna M. (1997) "Computer Supported Strategic Management," *Journal of International Information Management*: Vol. 6: Iss. 1, Article 2.

Available at: <http://scholarworks.lib.csusb.edu/jiim/vol6/iss1/2>

This Article is brought to you for free and open access by CSUSB ScholarWorks. It has been accepted for inclusion in Journal of International Information Management by an authorized administrator of CSUSB ScholarWorks. For more information, please contact [scholarworks@csusb.edu](mailto:scholarworks@csusb.edu).

# ***Computer Supported Strategic Management***

**Karen L. Fowler, University of Northern Colorado**

**Donna M. Scott, Mesa State College**

## **Introduction**

This paper presents an overview of the essential components of effective strategic management and a detailed description of the methodology for leading an organization through the strategic management process. This process can be extremely time consuming and can easily fall victim to “pep rally” thinking, rather than producing useful critical evaluation. The authors have successfully used GroupSystems software, one of a limited number of software products designed to support meetings, to significantly reduce the amount of time required for meetings and to improve the level of independent, unbiased input from participants. The parallel processing afforded by the software typically reduced meeting time from one-third to one-half that of face-to-face meetings, and the input anonymity feature of the software encouraged insightful candor from participants. The GroupSystems setup for each of the computer-supported meetings is detailed to illustrate how software of this type can be used to make strategic management efforts more successful. (GroupSystems is a registered trademark of Ventana Corporation, Tucson, Arizona.)

## **Overview of Strategic Management**

Strategic management can be defined as a continuous process which involves attempts to match or fit an organization with its changing external environment in the most advantageous way possible. A strategy is the means by which an organization chooses to move from its current position to some desired future state as a result of the strategic management process.

Strategic decisions are those decisions which affect the survival and future functioning of the organization as a whole. These decisions tend to have very long time horizons and generally address broad, multifaceted, ill-structured issues, such as globalization, technological innovation, deregulation, industry reorganization and competition, and societal changes. Multiple and competing stakeholders, such as employees, management, customers, suppliers, stockholders, and special interest groups, are generally taken into account when making strategic decisions

## **Overview of GroupSystems Tools**

GroupSystems software is currently available in two versions: GroupSystems V for DOS and GroupSystems for Windows. The subprograms or “tools” that comprise the two versions are similar, although continuing development on the Windows version is adding additional capabilities to it. The

authors used GroupSystemsV software, but GroupSystems for Windows could be used equally effectively to support the strategic management process.

GroupSystems V provides twelve integrated tools that can be utilized to support group productivity. Each of the tools offers numerous options and a high degree of flexibility in its use, making the software adaptable to a variety of applications. The functional processes supported by the tools include brainstorming, organization and consolidation of ideas, analysis and elaboration of issues, evaluation and prioritizing of alternatives, and information collection. The names of the tools suggest their intended functional use: Electronic Brainstorming, Group Outliner, Topic Commenter, Idea Organization, Categorizer, Group Writer, Policy Formation, Stakeholder Identification, Alternative Evaluation, Group Matrix, Vote, and Questionnaire.

The discussion that follows presents a step-by-step approach illustrating the use of six of the GroupSystems V tools (Electronic Brainstorming, Group Outliner, Topic Commenter, Idea Organization, Group Matrix, and Vote) to provide process structure, information management, and productivity support for strategic management meetings. A reduction in meeting time and an increase in the insightful candor of meeting participants are additional benefits provided by the anonymity-of-input feature offered by the software, coupled with the ability of the system to support simultaneous work by all meeting participants. The strategic management process can be conducted in half or less the time required without computer support, thanks to the parallel processing support and effortless information management afforded by GroupSystems tools.

## **Process of Strategic Management and the Use of GroupSystems Software**

### Strategic Management Models

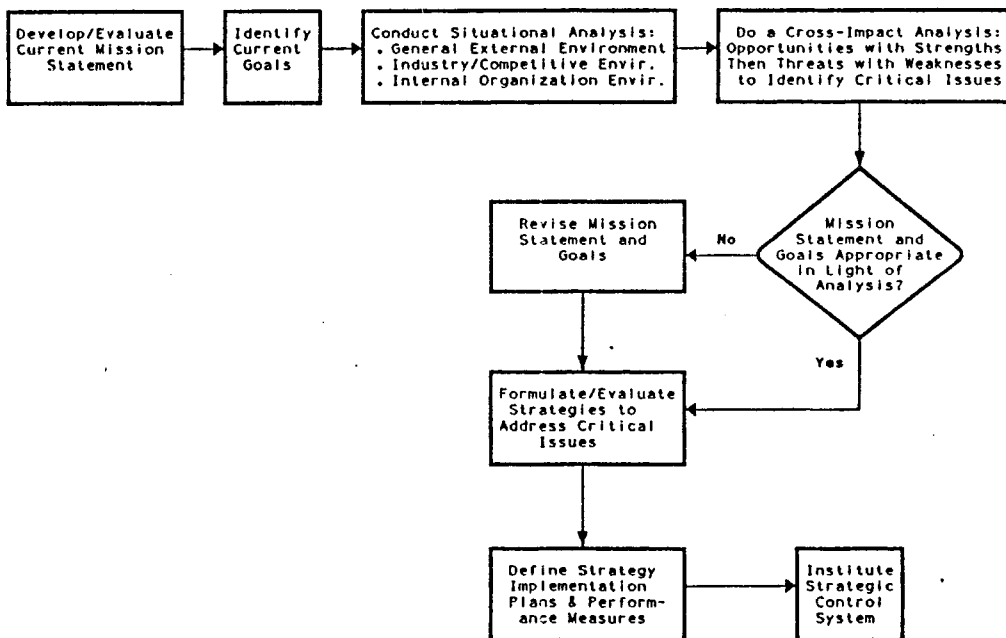
Similarities which exist in all strategic management models include the presence of a mission statement, identification of current goals, an extensive analysis of the external and industry/competitive environments facing the organization for the future, an assessment of the organization's internal strengths and weaknesses, the formulation and implementation of selected strategies, and an evaluation of whether the new strategies are working. For the purposes in this paper, the model presented as Figure 1 will be used. Each element in the model will be examined, and the utilization of GroupSystems software to provide support for each step will be discussed.

### Organization Mission

The mission statement should explain the organization's reason for being and describe its role in society. Often the mission statement will include comments on types of products and/or services provided, who the intended customers/clients might be, what makes the organization unique, in which activities the organization is involved, where the organization operates geographically, the organization's size, whether the organization is privately or publicly owned and/or funded, whether the organization is regulated and by whom, and how the organization sees its future role in society.

The collaborative effort needed to develop a mission statement can be supported through the use of Topic Commenter. The Topic Commenter tool enables strategic management participants to comment on

Figure 1. Strategic management model



specific aspects of an organization's current mission statement. In the case of a new statement, the tool guides the participants with respect to including desired elements in the statement. Participants can simultaneously read and respond to one another's comments.

*Topic Commenter*

*Session: Mission Statement*

*Topics:*

*Products and Services*

*Customers/Clients*

*Primary Activities*

*Geographic Area Served*

*Organization Size/Character*

*Ownership Structure/Funding Sources*

*Participant Instructions: Please comment on the various aspects of our organization's current Mission Statement as to whether they are appropriate, realistic, and useful in terms of guiding the organization's current operation and future operations. Include your suggestions for revisions or additions to the Mission Statement.*

Organizational Goals

This step in the process involves identifying the organization's current, or envisioned, goals. Goals are broad, general statements of what the organization is trying to accomplish in the long-term future. Goals are stated very generally in terms of *what* the organization wants to achieve, since the actual content of strategies selected later in the process will dictate *how* the organization reaches its goals.

The GroupSystems' tool suggested to support the formulation of organizational goals is Group Outliner. This tool structures the participants' discussion of the organization's goals and allows for the simultaneous formulation of subgoals. Both goals and subgoals can be added and/or deleted during the discussion. The end result should be group consensus on what the participants feel the organization is really trying to accomplish in the long-term future.

*Group Outliner*

*Session: Goals*

*Goals (examples)*

*Become number one in the industry*

*Increase product leadership levels*

*Reduce quality control problems*

*Improve customer service levels*

*Increase profitability and ROI levels*

*Maintain a work climate which recognizes the value of employees*

*Participant Instructions: Please review the list of our current organizational goals. They represent what we are trying to accomplish as an organization. Add any goals or subgoals that you feel should have been included. Please enter comments on any goals on this list or ones that are suggested during the course of the session.*

### Situational Analysis

The intent of this stage in the process is to identify the majority of potential factors, both outside and inside the organization, that could have an effect on the organization's future survival and performance. This stage in the process tends to be very time consuming due to the sheer volume of information needed and often because the information is not readily available. The situational analysis can be separated into three main subsets: general external environment analysis, industry/competitive analysis, and internal organizational analysis. These components are shown in Figure 2. The essence of strategic management is matching or fitting an organization with its external environment in the most advantageous way possible. In general, it is difficult to control the environment which exists outside of the organizational boundary, thus many strategists plan for the future from the outside in.

#### General External Environment Analysis.

The general external environment consists of factors and/or trends that exist or are developing in an organization's external environment over which the organization has little control. Examples include changes in demographics or consumer demand patterns, passage of legislation, extended recessions, technological advances, labor shortages, or shifts in societal norms. These factors can be grouped into the following categories: social, political, legal, technological, economic, and global trends.

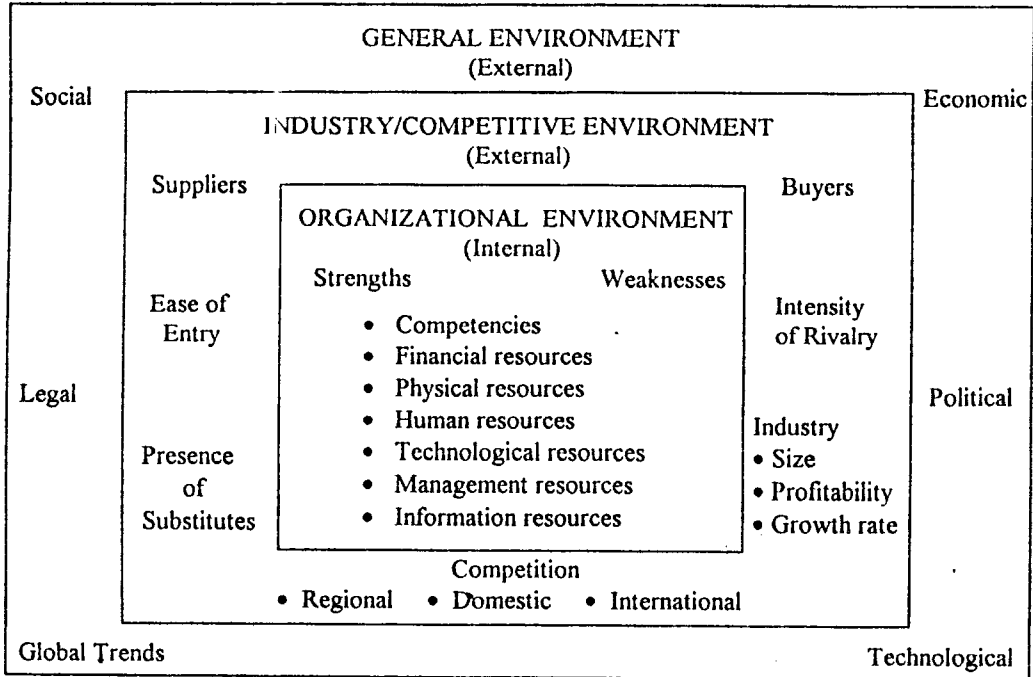
#### Industry and Competitive Analysis.

The industry/competitive environment consists of that portion of the external environment which more immediately surrounds an organization. Examples of factors to be analyzed at this level might include size and profitability of the industry, industry growth rates, number of and identification of competitors (along with their strengths, weaknesses, and strategies), likelihood of new entrants, intensity of rivalry within the industry, threat of substitute products or services, and level of power of suppliers and buyers.

#### Internal Organizational Analysis.

This analysis focuses on the internal competencies and resources of the organization. Typical categories include financial resources, physical resources, human resources, technological resources, organizational resources (e.g., systems and procedures), and information resources (e.g., knowledge of the competition and information data bases).

Figure 2. Situational analysis factors inside and outside the organization.



### OT/SW Analysis

This mass of information needs to be captured and organized into a usable form. Because it is suggested that organizations plan from the outside in, a process referred to as the OT/SW Analysis (opportunities and threats/strengths and weaknesses) can be used. This concept originated with the SWOT Analysis (strengths, weaknesses, opportunities, and threats), which has been used for many years, but in this case external opportunities and threats will be examined *prior* to assessing internal strengths and weaknesses.

### Opportunities

Opportunities are derived from *both* the general external environment analysis and the industry/competitive analysis. Opportunities represent those expected external conditions or trends which should prove to be favorable for the organization in the future.

### Threats

Threats are also derived from *both* the general external environment analysis and the industry/competitive analysis. Threats represent those expected external conditions or trends which might prove to be unfavorable for the organization in the future.

### Strengths

Strengths are derived from the internal organizational analysis and should represent those areas in which the organization excels or shows distinctive competencies.

### Weaknesses

Weaknesses are also derived from the internal organizational analysis and should represent those areas in which the organization shows deficiencies or vulnerabilities that could impede an organization's future performance.

GroupSystems' Idea Organization tool is well designed to facilitate the OT/SW Analysis. It provides a read-only reference window that can be used to list categories within the external and internal environments to focus participants' attention on key factors that should be considered. Idea Organization also provides a comment-compilation window for participants to use in entering the opportunities, threats, strengths, and weaknesses they perceive in their analysis of the environment. The group facilitator will need to decide whether to conduct separate sessions with different reference file lists for factors in the general external environment and factors in the industry/competitive environment, or whether to conduct a single session combining the two levels of external environment in a single reference file list. This decision will depend on the size and makeup of the strategic management team, the size and complexity of the organization, and the amount of information involved. For a smaller, less complex organization, the general and industry/competitive levels could be combined, as shown in the example below.

#### *Idea Organization*

##### *Session: External Environment Opportunities and Threats*

*Participant Instructions: Please list what you consider to be the opportunities and threats which exist in the external environment facing our organization for the future. Refer to the Reference File window for factors within the general external environment and the industry/competitive environment that may produce opportunities and threats.*

##### *Reference File:*

*General External Environment Factors*

*Social*

*Political*



- Legal
- Technological
- Economic
- Global Trends
- Other
- Industry/Competitive Environment Factors
  - Industry Characteristics
    - Industry Size
    - Profitability
    - Growth Rates
    - Likelihood of New Entrants
    - Intensity of Rivalry
    - Threat of Substitute Products/Services
    - Power of Suppliers to the Industry
    - Power of Buyers from the Industry
  - Competitive Characteristics
    - Number of Competitors
    - Major Competitors
    - Competitors' Strengths/Weaknesses
    - Competitors' Strategies

This process is then repeated for internal organizational strengths and weaknesses. During this step, an unlimited number of comments can be entered, as it is important here to try to identify *any* issues, trends, or developments that may affect the future success of the organization. While entering comments, participants should be reminded to limit each comment to a single idea and try to phrase the comment clearly, that is, without double negatives, dualities, or technical terms not understood by all.

The opportunities, threats, strengths, and weaknesses generated in the above step should then be refined in accordance with the organization's previously stated goals. The objective is to focus on the factors that will have a *direct* influence on the organization's ability to meet its goals. The result should be the identification of approximately six to eight factors per category.

The Vote tool in the GroupSystems package provides an efficient means of ranking the lists of opportunities, threats, strengths, and weaknesses contributed by participants in terms of their relevance to the organization's success in achieving its stated goals.

### *Vote*

#### *Session: Ranking Opportunities*

*Participant Instructions: Please rate the opportunities we identified earlier in terms of their likely impact on our organizational goals. To determine which opportunities are most important for us to pursue, each opportunity needs to be evaluated using a rating scale of 1 to 10. Assign a 10 to an opportunity you feel*

*would have a significant positive effect on achieving our organizational goals; assign a minimum value of 1 if you believe that the opportunity would provide only minimal benefit.*

The same process should then be repeated to rank-order the lists of external environment threats, internal organizational strengths, and internal organizational weaknesses. After the lists have been prioritized in terms of their expected impact on the organization's ability to meet its goals, the top-ranked items in each list should be selected for input to the cross-impact analysis in preparation for strategy development. A natural clustering of scores will often suggest the cutoff point for items to be selected from each list; otherwise, an arbitrary limit of a half dozen items per list will assure that subsequent analysis steps do not get bogged down in the evaluation of many items that are of moderate or minimal importance.

### Cross-Impact Analysis

The refined list of opportunities and threats should then be considered in combination with the refined list of organizational strengths and weaknesses. The objective is to look for matches or combinations that may prove to be beneficial or harmful for the organization in the future. The refined list of opportunities should be crossed with the refined set of strengths, and the refined list of threats should be crossed with the refined set of weaknesses. The intent is to identify the most critical issues for further analysis and strategy development.

The Group Matrix tool in GroupSystems can be used to create a matrix of strengths crossed with opportunities. Participants would enter a value in each cell to indicate the degree to which the paired items could, in their opinion, interact to produce a favorable outcome. A second matrix, crossing weaknesses with threats, would be used next to determine the unfavorable critical issues facing the organization.

### *Group Matrix*

#### *Session: Critical Issues*

*Participant Instructions: In the following matrix you will find the top-ranked opportunities crossed with the list of our primary organizational strengths. Please enter a value from 0 to 5 in each cell representing the strength of association you feel is present between each opportunity and each strength, with 0 indicating no association and 5 indicating a strong association. For example, a rating of five would indicate that you consider the strength a key element in being able to successfully take advantage of the opportunity.*

### Refinement of Critical Issues

Following the cross-impact analysis using Group Matrix, the list of critical issues can be reduced down to include only those top-ranked issues that the participants rated as crucial to the organization's future.

The participants should discuss this final list of critical issues but should refrain from offering ideas for solutions at this time. The intent here is to be sure everyone agrees that the critical issues identified represent an accurate basis for strategy formulation and that some crucial factor in the analysis has not been overlooked.

The GroupSystems' Topic Commenter tool can be used again here to capture and organize participants' comments on the refined list of critical issues as a form of perceptual checking. This is a very important step, as the critical issues will be the basis for strategy formulation.

### *Topic Commenter*

#### *Session: Refinement of Critical Issues*

*Participant Instructions: Please comment on the refined set of critical issues as to whether they accurately portray the future situation facing this organization and represent the basis for future strategy formulation. If you disagree with a stated issue, please elaborate.*

#### Revision of Mission and Goals

Before proceeding to strategy formulation and evaluation, it should be determined whether the current mission statement and goals, examined previously, remain appropriate for the organization. In light of the additional information emanating from the situational and critical issues analyses, the mission statement and goals may need additions, deletions, or revision to some extent. The Topic Commenter tool provides a convenient means of collecting feedback from the participants as to whether they feel the mission statement and goals are still appropriate subsequent to the additional analysis that has taken place.

### *Topic Commenter*

#### *Session: Mission and Goals Revision*

*Participant Instructions: Please comment as to whether you feel the mission statement formulated earlier is still appropriate. Do the same for the goal statements. Before entering your comments, be sure to read what the current mission and goal statements say.*

#### Strategy Formulation

Participants should be encouraged to think freely and imaginatively with respect to strategy formulation. Potential alternatives should be generated for each identified critical issue. It is important that the formulation and evaluation steps occur separately. The tendency to evaluate an alternative at the moment it is generated is tempting. Simultaneous formulation/evaluation, however, tends to dampen creativity and thus minimizes the additional formulation of new ideas. The Electronic Brainstorming

tool in GroupSystems supports creative idea generation and independent thinking. Separate Electronic Brainstorming sessions should be conducted for all critical issues in the refined list.

### *Electronic Brainstorming*

#### *Session: Strategy Formulation*

*Participant Instructions: What strategies could our organization use to address the critical issue of [description of issue]? Be creative! Give us all your ideas; don't hold back any that you think might be impractical or foolish. The germ of a great idea is often embedded in a suggestion that appears to be useless.*

#### Strategy Evaluation

Following the generation of alternative strategies, the ideas proposed must be evaluated to identify those strategy alternatives perceived by the group to have merit in terms of their abilities to address the organization's critical issues and meet the identified goals. It is important at this stage that participants begin to work toward consensus in determining the appropriate strategies for the organization. This stage may require several face-to-face meetings combined with decision support assistance. First, the list of alternatives generated from the brainstorming session needs to be reviewed and evaluated by the group in order to identify those suggestions with the highest potential for achieving the desired results. The Vote tool in GroupSystems helps participants move toward a convergent approach by selecting which strategies should be considered further.

### *Vote*

#### *Session: Strategy Evaluation*

*Participant Instructions: Please select a value between 1 and 10 for each strategic alternative listed along with its corresponding critical issue. A value of 1 indicates that you feel this strategy deserves a low priority in terms of dealing with the critical issue and a value of 10 indicates that you feel this strategy deserves a very high priority in terms of strategies selected for dealing with the critical issue.*

When the list of alternative strategies has been reduced to include only those alternatives that appear to have potential for meeting organizational goals and addressing the identified critical issues, the participants can move toward making choices of final alternatives. This process may involve a number of face-to-face meetings. Face-to-face meetings are suggested here because it is important at this stage that participants build trust and cooperation or, in other words, *buy-in* with respect to the choice of strategic alternatives. Anonymity is not desirable at this point as top management needs to know which individuals are supportive, which are not, and for what reasons. The end result of this stage should represent the selected strategic alternatives.

#### Strategy Implementation and Performance Measures

Successful implementation of the selected strategic alternatives requires a well-thought-out plan in itself. Decisions must be made as to what specific changes need to occur in the organization to accommodate the new strategies. The strategies must be transformed from concepts and decisions which exist in the minds of the strategic management participants into a concrete and workable strategic plan. This means that organizational resources will need to be reallocated to support the new direction. Structural and reporting changes may be necessary, training and development of personnel may be required, and, perhaps most importantly, organization-wide commitment to the new direction must be garnered.

During the implementation planning stage, agreement should be reached on the performance indicators that will be used to determine whether progress is being made. Because management's concern is with the survival and prosperity of the organization as a whole, a number of performance indicators will need to be developed and actual performance must be measured and compared with performance standards to identify any deviations.

The complexities involved in the implementation and performance assessment stage will require a number of on-going face-to-face meetings and meetings that can be conducted using the support tools available in GroupSystems. Issues and problems related to the implementation of new strategies is a field of study in itself, one that should be referenced as needed in the implementation process.

## **Summary**

Strategic management is often perceived as ill-structured problem solving. The process depends on the on-going collection, organization, and interpretation of a great quantity of information and perceptions, which are interwoven with the values and judgments of an organization's management. Through the use of GroupSystems software, this process can be better managed. Computer-mediated sessions, supplemented by face-to-face sessions, provide structure and efficiency gains to what is often perceived as a nearly unmanageable process.

This paper has presented a format by which specific tools available in GroupSystems can be utilized to support group productivity in order to support the strategic management process. A step-by-step approach illustrating the use of six of the GroupSystems V tools was presented. Through the application of Electronic Brainstorming, Group Outliner, Topic Commenter, Idea Organization, Group Matrix, and Vote, better meeting structure, information management, and productivity support can be attained for strategic management meetings. The authors have experienced a reduction in meeting time required and an increase in the insightful candor of meeting participants as a result of the use of GroupSystems tools.